

## CLAIMS

1. Use of a photocatalyst in hair compositions intended to decrease and/or to eliminate  
5 the unwanted organic compounds on human hair, said photocatalyst being chosen from:

1) water-insoluble compounds comprising at least one element of the following columns of the Periodic Table of Elements: IIb, Vb, VIb, VIIb, VIII  
10 (3 columns), Ib and Va;

2) water-insoluble sulphides, carbides and phosphides comprising at least one element of the following columns of the Periodic Table of Elements: IIb, IIIa, IVa, IVb;

15 3) water-insoluble composites comprising at least one element chosen from:

titanium, zinc, silicon, aluminium, magnesium, sodium, calcium and zirconium.

2. Use according to Claim 1, characterized  
20 in that the organic compound is sebum.

3. Use according to either one of Claims 1 and 2, characterized in that the photocatalysts of family 1) are chosen from:

- $V_2O_5$ ,  $CeO_2$ ,  $Nb_2O_5$
- 25 -  $WO_3$ ,  $Na_4W_{10}O_{32}$
- $MoO_3$ ,  $MoS_2$ ,  $RuO_2$ ,  $Mn_2O_3$ ,  $Bi_2O_3$ ,
- $Fe_2O_3$ ,  $Co_3O_4$

- $\text{CuInS}_2$ ,  $\text{CuIn}_5\text{S}_8$ ,
- metals such as Ag, Cu, Au, Ni.

4. Use according to either one of Claims 1 and 2, characterized in that the photocatalysts of family 2) are chosen from:  
GaP, SiC, CdS and TiS.

5. Use according to either one of Claims 1 and 2, characterized in that the photocatalysts of family 3) are chosen from the following composites:  
10  $\text{TiO}_2 + \text{ZnO}$ ,  $\text{TiO}_2 + \text{CuO}$ ,  $\text{TiO}_2 + \text{RuO}_2$ ,  $\text{TiO}_2 + \text{SnO}_2$ ,  $\text{TiO}_2 + \text{MoO}_3$ ,  $\text{TiO}_2 + \text{WO}_3$ ,  $\text{TiO}_2 + \text{GeO}_2$ ,  $\text{TiO}_2 + \text{MoO}_3$ ,  $\text{TiO}_2 + \text{WO}_3$ ,  $\text{TiO}_2 + \text{GeO}_2$ , and  $\text{TiO}_2$  surface-coated with compounds comprising at least one element chosen from Al, Zn, Zr, Cr, V, Nb, Fe, Cu, Co, Ni and Mn.

15 6. Use according to any one of Claims 1 to 4, characterized in that the amount of photocatalyst is between 0.1 and 20% by weight relative to the total weight of the composition.

7. Use according to any one of Claims 1 to 6, characterized in that said hair compositions comprise an aqueous or aqueous-alcoholic medium.

8. Use according to any one of Claims 1 to 7, characterized in that said hair compositions also comprise an additive chosen from thickeners,  
25 fragrances, pearlescent agents, preserving agents, sunscreens, anionic, nonionic, amphoteric or cationic surfactants, anionic, nonionic or amphoteric polymers,

cationic polymers, proteins, protein hydrolysates, ceramides, pseudoceramides, C<sub>16</sub>-C<sub>40</sub> linear- or branched-chain fatty acids such as 18-methyl eicosanoic acid, hydroxy acids, vitamins, provitamins such as panthenol,  
5 silicones, plant oils, mineral oils and synthetic oils, and anti-dandruff agents.

9. Use of a photocatalyst in hair compositions intended to decrease and/or delay regreasing of human hair, said photocatalyst being  
10 chosen from:

1) water-insoluble compounds comprising at least one element of the following columns of the Periodic Table of Elements: IIb, IIIb, IVb, Vb, VIb, VIIb, VIII (3 columns), Ib and Va;

15 2) water-insoluble sulphides, carbides and phosphides comprising at least one element of the following columns of the Periodic Table of Elements: IIb, IIIa, IVa, IVb;

3) water-insoluble composites comprising at  
20 least one element chosen from:

titanium, zinc, silicon, aluminium, magnesium, sodium, calcium and zirconium.

10. Method of cosmetically treating human hair, intended to decrease and/or to eliminate the  
25 unwanted organic compounds on human hair, in particular sebum, characterized in that it comprises the following steps:

- i) a composition comprising a photocatalyst according to any one of Claims 1 to 5, in a cosmetically acceptable medium, is applied to the hair,
- ii) optionally, the hair is massaged using the
- 5 fingers,
- iii) and optionally, the hair is dried.

11. Method of treating hair in order to decrease and/or delay regreasing of human hair, said method being characterized in that it comprises the

10 following steps:

- i) a composition comprising a photocatalyst as defined below, in a cosmetically acceptable medium, is applied to the hair, in particular dry hair,
- ii) optionally, the hair is massaged using the
- 15 fingers,
- iii) optionally, the hair is dried.

12. Cosmetic hair composition, characterized in that it comprises, in a cosmetically acceptable medium, at least one photocatalyst chosen from:

- 20 1) water-insoluble compounds comprising at least one element of the following columns of the Periodic Table of Elements: Vb, VIIB, VIII (2nd and 3rd columns starting from the left), and Va, and the following insoluble
- 25 compounds:  $\text{MoS}_2$ ,  $\text{RuO}_2$ ,  $\text{Mn}_2\text{O}_3$ ,  $\text{Bi}_2\text{O}_3$ ,  $\text{CuInS}_2$ ,  $\text{CuIn}_5\text{S}_8$ ;
- 2) water-insoluble sulphides and phosphides

comprising at least one element of the following columns of the Periodic Table of Elements: IIb, IIIa, IVa, IVb;

- 3) water-insoluble composites chosen from:  $\text{TiO}_2 +$   
5  $\text{ZnO}$ ,  $\text{TiO}_2 + \text{CuO}$ ,  $\text{TiO}_2 + \text{RuO}_2$ ,  $\text{TiO}_2 + \text{SnO}_2$ ,  $\text{TiO}_2 + \text{MoO}_3$ ,  
 $\text{TiO}_2 + \text{WO}_3$ ,  $\text{TiO}_2 + \text{GeO}_2$ ,  $\text{TiO}_2 + \text{MoO}_3$ ,  $\text{TiO}_2 + \text{WO}_3$ ,  $\text{TiO}_2 +$   
 $\text{GeO}_2$ , and  $\text{TiO}_2$  surface-coated with compounds comprising  
at least one element chosen from V, Nv, Cu, Mn.

13. Composition according to Claim 12,  
10 characterized in that the photocatalysts of family 1)  
are chosen from:

- $\text{V}_2\text{O}_5$ ,  $\text{Nb}_2\text{O}_5$
- $\text{RuO}_2$ ,  $\text{Mn}_2\text{O}_3$ ,  $\text{Bi}_2\text{O}_3$ ,
- $\text{Co}_3\text{O}_4$
- 15 -  $\text{CuInS}_2$ ,  $\text{CuIn}_5\text{S}_8$ .

14. Composition according to Claim 12,  
characterized in that the photocatalysts of family 2)  
are chosen from:  
 $\text{GaP}$ ,  $\text{CdS}$  and  $\text{TiS}$ .